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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/807,130 | 03/23/2004 | Jianmin Shi | ARL 04-16 | 3686 |
| 21364 7590 03/12/2010 U S ARMY RESEARCH LABORATORY ATTN: RDRL-LOC-I 2800 POWDER MILL RD ADELPHI, MD 20783-1197 | | | EXAMINER NWAONICHA, CHUKWUMA O | |
| | | | ART UNIT 1621 | PAPER NUMBER |
| | | | MAIL DATE 03/12/2010 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/807,130

Applicant(s)

SHI ET AL.

Examiner

CHUKWUMA O. NWAONICHA

Art Unit

1621

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/200)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Current Status

1. Claims 1-11 are pending in the application.
2. This action is responsive to Applicants' amendment of 24 December 2009, 3 February 2010 and 16 February 2010.
3. Receipt and entry of Applicants' amendment is acknowledged.

The 103 rejection is withdrawn following Applicants amendment. The prior art luminescence compound is substituted with amine, which is different from non-amine substituted luminescence compound claimed by Applicants.

The nonstatutory obviousness-type double patenting rejection has been withdrawn because Applicants filed a Terminal Disclaimer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

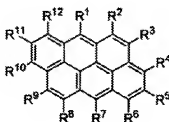
The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jarikov, {CN 1453886 same as US 7,183,010}.

Applicants claim an organic luminescent material comprising the compound of the general formula 1; wherein all the variables are as defined in the claims.

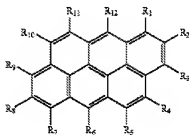


Formula 1

Determination of the scope and content of the prior art (M.P.E.P. §2141.01)

Jarikov teaches an organic light-emitting diode devices and more particularly to the design of the composition of the organic layers for improvements in operational stability comprising the compound of the general formula 2 wherein the variables are substituents R₁ through R₁₂ are each individually hydrogen, fluoro, cyano, alkoxy, aryloxy, diarylamino, arylalkylamino, dialkylamino, trialkylsilyl, triarylsilyl, diarylalkylsilyl, dialkylarylsilyl, keto, dicyanomethyl, alkyl of from 1 to 24 carbon atoms, alkenyl of from 1 to 24 carbon atoms, alkynyl of from 1 to 24 carbon atoms, aryl of from 5 to 30 carbon atoms, substituted aryl, heterocycle containing at least one nitrogen atom, or at least one oxygen atom, or at least one sulfur atom, or at least one boron atom, or at least one phosphorus atom, or at least one silicon atom, or any combination thereof; or any two

adjacent R₁ through R₁₂ substituents form an annelated benzo-, naphtho-, anthra-, phenanthro-, fluorantheno-, pyreno-, triphenyleno-, or peryleno-substituent or its alkyl or aryl substituted derivative; or any two R₁ through R₁₂ substituents form a 1,2-benzo, 1,2-naphtho, 2,3-naphtho or 1,8-naphtho. See columns 36, 37, 47, 49-53 and the claims.



Formula 2

Ascertainment of the difference between the prior art and the claims (M.P.E.P.,

§2141.02)

Applicants claimed organic luminescent material comprising the compound of the general formula 1 differs from the teachings of the prior art reference of Jarikov in that Jarikov teaches an organic luminescent material comprising the compound of the general formula 2; wherein the variables are as defined in formula 2 while Applicants claim an organic luminescent material comprising the compound of the general formula 1, wherein the variables are as defined in claim1.

Finding of prima facie obviousness--rational and motivation (M.P.E.P., §2142-

2143)

The instantly claimed organic luminescent material comprising the compound of the general formula 1 would have been obvious to one of ordinary skill in view of the

compounds of Jarikov because the instantly organic luminescent material comprising compounds that are positional isomers or compounds of the general formula 2 taught by the reference. It should be noted that isomers are obvious because of the physical and chemical properties and are considered to be obvious absent unexpected results.

One of ordinary skill in the art would have a reasonable expectation of success in producing an organic luminescent material comprising the compound of the general formula 1 by correlating the teachings of reference cited. Said person would have been motivated to practice the teachings of the reference cited because the compounds are important in industrial applications as organic luminescent materials. The instantly claimed invention would therefore have been obvious to one of ordinary skill in the art.

Applicants' amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Chukwuma O. Nwaonicha/
Examiner, Art Unit 1621

/Sikarl A. Witherspoon/
Primary Examiner, Art Unit 1621

(for)

Daniel Sullivan
Supervisory Patent Examiner,
Technology Center 1600